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ABSTRACT

Nontraditional approaches in higher education are discussed, with attention to: (1) economic and philosophical reasons for nontraditional education; (2) future thrusts; (3) nontraditional instructional modalities; and (4) the implications for higher education of the extensive use of nontraditional approaches. It is suggested that nontraditional education helps students to learn on their own and is vital in the concept of lifelong learning. Nontraditional modalities include: videocassettes and videotapes, Community Antenna Television (CATV), individualized instruction, programmed instruction, audio-tutorial method, Keller Plan or Personalized System of Instruction, independent study, learning contracts, experiential learning, and correspondence courses using radio, television, and newspapers. Implications include: new media need to be considered as colleges modernize and plan their facilities; budgeting for new technologies is an important concern; institutional accrediting agencies may have to undergo changes in philosophy and evaluation methods; higher education may begin to change the present credit and degree systems; professional roles will change as a result of efforts to individualize instruction; and colleges may need to re-examine current admissions procedures. A 28-item bibliography is appended. (SW)

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# NON-TRADITIONAL EDUCATION: MODALITIES AND IMPLICATIONS FOR HIGHER EDUCATION

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DR. BARBARA F. ASH

## NON-TRADITIONAL EDUCATION

Non-traditional education has a number of meanings and implications. Howard R. Bowen in Gould's text provides this description:

> The term non-traditional study as usually conceived includes almost anything in higher education that is new, unusual, or not usually practiced--unconventional modes of instruction such as independent study, home study, study aided by TV or computers, or study conducted in the community through internships or social service; non-traditional students, such as housewives, men and women in mid career, the elderly, shut-ins, or inmates of penal institutions; unusual schedules, such as part-time study, work study, shortened programs, or flexible programs. (12:151)

This paper will address the following aspects of non-traditional education: (1) the economic and philosophical reasons for non-traditional education; (2) the future thrusts of non-traditional education; (3) non-traditional instructional modalities; and (4) the implications for higher education of the extensive use of non-traditional approaches.

### Economic and Philosophical Reasons for Non-Traditional Education

In recent years, our educational system has undergone a number of changes. One of these changes is reflected in college and university enrollment patterns. Older students are

now attending full- and part-time programs in record numbers. In many cases, they outnumber the younger learners. According to Harrington:

> Part-time credit, mainly an adult phenomenon, has increased more rapidly than full-time credit, and now exceeds full-time registration in many institutions. When non-credit programs are added, this means that adults now outnumber younger students and are the new majority in higher education. (14:1)

The period of the 1970's produced deep uncertainties about the future for many Americans. Fluctuating economic conditions and political scandals were the roots of this uneasiness. "But despite budget cutbacks and the change of mood, adult education fared well, actually showing gains in status and enrollment." (14:25)

Several factors contributed to the surge of both full- and part-time adult enrollments. First, there has been a growing belief that learning is a life-long process. This process has not been confined to the traditional classroom. Adults have become aware of the value of continued learning throughout their lives.

Second, there has developed a great interest in providing education for all Americans, the disadvantaged as well as the advantaged. This democratization of higher education has resulted in aid for higher education for entitlement--not necessarily scholarship. Roueche asserts:

> Increased educational opportunities for all has become a societal demand. Postsecondary-school education is a necessity, not a luxury. (25:3)

A mandate to improve post-secondary education resulted from The Educational Ammendments of 1972 to the Higher Education Act of 1965 and spurred the non-traditional movement. A fund to improve post-secondary education was created to implement a number of goals. These goals are outlined by Gould:

> . . . providing equal educational opportunity for all;
>
> . . . creation of institutions and programs involving new paths to career and professional training, and new combinations of academic and experiential learning;
>
> . . . the design and introduction of cost-effective methods of instruction;
>
> the introduction of institutional reforms designed to expand individual opportunities for entering and reentering institutions and pursuing programs of study tailored to individual needs; . . . (12:x-xi)

Pressure groups representing the disadvantaged have also provided a catalyst for reform. Harrington states:

> Movements for reform took on a new dimension when segments of the disadvantaged began to mount pressure campaigns and on occasion, to use violence to publicize their demands. (14:27)

A part of this reform has resulted in a belief that "education should be measured by what the student knows rather than how or where he learns it." (6:1) A major shift has certainly occurred in the thinking of those in higher education. Harrington notes this fact:

> During this period a leading educational organization, the National Association of State Universities and Land-Grant Colleges, changed the

> title of its central purpose brochure from Excellence to Excellence and Opportunity. The decision reflected a major shift in higher education thinking, one of great importance to adults interested in learning. (14:27)

Thus, there evolved a renewed interest in providing a second chance for the physically handicapped, the elderly, women, low-income citizens, and adults living in remote localities. The changing attitude toward disadvantaged students "has resulted in improved educational chances for adults who have been passed by in the standard school-through-college parade." (14:4)

Third, modern American living has become increasingly complex. As a result, there has been a growing need for the educated or advantaged adult to continue his or her education. With rapidly changing technologies, many adults have feared obsolescence. The unstable economy has kindled a desire for raises and promotions. Many of the professions have begun to require relicensure. In addition, a number of firms have encouraged adults to update their skills. These firms have included tuition reimbursement in the fringe-benefit package and have provided employees with time off to attend classes. All of these factors have contributed to the emergence of continuing professional education. Education is no longer considered a "one-shot" opportunity. Harrington concurs:

> Courses were supplied by trade and professional associations, by large business firms, and by training companies organized for profit. At the

> same time, since demand was nearly inexhaustible, there was plenty of room for higher education to participate in this growth industry. (14:26)

Harrington concludes:

> Professional men and women flocked to take advantage of these increasing opportunities. Some returned to campus decades after graduation. They did so because they feared professional obsolescence, or wanted raises and promotion, or enjoyed renewing contact with campus life. (14:26)

The pressures stemming from social, industrial-technological, and democratic developments have lessened the emphasis on elitest education.

In spite of the growing number of students, the effort of higher education on behalf of the disadvantaged student has not always been very successful. Federal funds have been cut, and many programs have suffered from the loss of these funds. Others have been criticized for being of poor quality. "Colleges and universities concluded that they must do more for adults, whether disadvantaged or not. They also came to see that some adjustment of requirements and the introduction of innovative and experimental programs did not force down standards." (14:28)

Educators soon came to realize that the "new clientele" required changes in the educational system. Cross states:

> Changes in one part of the educational system create new pressures and demand new responses from other components. For example, changing the nature of the student body changes the interests and needs of learners. (6:2)

An educational revolution has resulted from "what started as a simple approach to equality through lowering the access barriers to colleges . . . involving all of higher education." (4:9) A new attitude has evolved in higher education. Cross explains:

> . . . it is the attitude that "puts the student first and the institution second, concentrates more on the former's need than the latter's convenience" that is the focal point of the non-traditional movement. (6:2)

Finally, there has been a slow but steady realization on the part of educators that "the net result of delivering the traditional curriculum to non-traditional students who want it may be to increase the educational gap between the haves and the have nots." (6:4) Open admissions policies have pinpointed the wide gap in individual differences among students. Remedial programs have been organized to fit the new learners to the institutions, but institutions soon realized that they should be changed to fit the needs of the new students.

As attitudes began to change and teachers adapted teaching styles to the needs of the new learners, changes in the instructional areas followed. Educators began to change not only the curriculum content but also the method of delivery to fit the needs of the new clientele, the non-traditional students.

The new decade has brought with it a number of reforms in higher education. This fact is underscored by Harrington:

> Adult learners are at the center of today's most interesting innovations in higher education--credit for learning through life experience, credit by examination, drop-out and drop-in arrangements, special degrees for adults, weekend classes, all sorts of non-traditional experiments. (14:2)

Changing philosophies toward educating the disadvantaged, continuing education for the professions, and education for lifelong learning have had an impact on the non-traditional movement. The methods of delivery, however, have not changed so radically. "The new technologies are not yet making their predicted impact." (6:5)

Lectures and class discussions are still the norm on many campuses. Many of the major changes in educational technology are yet to come. Adults tend to prefer learning by methods which are familiar to them. Yet, as they are further exposed to the new educational technologies, their acceptance and use will become more prevalent.

The economic fluctuations now evidenced in our economy give us many reasons to anticipate long-term fiscal problems in education. This is noted by Christopher Dede:

> Technology has boosted productivity relative to cost in many capital-intensive industries. But in labor-intensive activities such as education, innovations of method have proven far less "cost-effective." (7:1)

In the coming years, the inflationary losses for institutions are projected to be a net average of seven percent or more per year. With the increased cost of resources, especially energy, coupled with the funding problems resulting from economic and political instability, the economic

crunch for education is rapidly approaching. In many cases, the crisis is already here. "The economic plight of hard-pressed colleges provides . . . motivation for improving the quality of instruction." (6:105) Rich concurs:

> Higher education today is one of the biggest businesses in the country with operating revenues of $52 billion, about 11.5 million students and 1.8 million employees. Like other basic industries, it's in trouble. (23)

Rich continues:

> The culprits are inflation and a declining market. . . . The most acute problem is inflation. . . . What colleges buy, ranging from teacher's salaries to books, periodicals, electricity and fuel, has jumped 85 percent from 1971 to 1980. (23)

As a result of the economic crisis and the runaway resource costs, the public is carefully scrutinizing monies allocated for education.

We are now in a period when people are less willing to spend more of their income on education. This is most evident in our own State of Massachusetts. The public has said, "Enough!" Dede reports:

> The reason that our share of the fiscal "pie" has continuously increased has not been because we've been particularly wasteful with money, but because education is labor-intensive rather than capital intensive (that is, we use people to produce our products instead of using machines). (7:2)

In capital-intensive industries, salaries climb more rapidly than capital costs, thus costing the consumer less money. This is not so in education. Dede continues:

> . . . our labor-intensive position in education has caused us steadily to use up more and more of the consumer dollar, just as have all the other labor-intensive industries; and we have finally reached the limit. (7:2)

The gloomy picture described by Dede and others has many implications for non-traditional education. The impact may be the greatest in the area of educational technology. Dede asserts:

> . . . at the moment the cost of computer-assisted instruction is decreasing 5% per year with about a 10% per year increase in productivity. As this trend is likely to continue and improve, a conservative estimate would be that in a decade these machines will be three times as productive at one half the cost. (7:2)

Serious choices will have to be made by educational administrators and teachers alike. They will have to use radical new approaches in order to find less expensive ways of teaching. Bits and pieces can be shaved from our educational programs--a little here, and a little there. But the end result will be disaster; nothing will be done well. Programs that are not cost effective will be the first to be eliminated. Another solution would be to eliminate certain objectives--"to say to society, 'We're not going to meet this particular objective anymore; we don't have the money.'" (7:3)

It has become necessary to discover fiscally less expensive approaches to education. "Changing education will not be easy, but it will be easier than changing the U. S. economy and resource problems and people's priorities on their personal spending." (7:3)

The change in education will inevitably result in an increased use of technology. In order to maintain high teaching standards and at the same time reduce educational costs, instructional technology must be of high quality. The use of technology in the future will utilize a capital-intensive approach instead of the labor-intensive approach we now experience.

Non-traditional education has been flourishing in many of the community and junior colleges. These were the first institutions to adopt open-door admissions policies. Resulting high attrition rates forced these institutions to adapt their teaching to the needs of the learners. More recently, four-year institutions, particularly at the state level, have adopted open-door admissions policies. They now have the "new clientele" in their ranks. That fact, in addition to the economic crunch, is moving many of the more "traditional institutions" away from their lock-step programs. Roueche notes:

> Almost all colleges profess open-door admissions policies. However, non-traditional students do not persist long. Therefore, philosophy and practice are at odds. The open door must be more than an admissions statement. (25:6)

Non-traditional education helps students to learn on their own. This is vital in the concept of lifelong learning. The economic conditions, as well as the industrial and technological changes and social developments, have thurst us at full speed toward non-traditional education.

Future Thrusts of Non-Traditional Education

Non-traditional education is growing. Students are demanding more, and taxpayers are insisting on a valid return for every dollar they spend. Following are some of the directions in which non-traditional education is moving:

New instructional technologies may be taking the place of some of the modes of instruction currently in practice. Quality instructional technology will reduce educational costs dramatically, but it must fit the needs of the new clientele. One such technology might be the implementation of a large-scale, non-computer-linked television programming system. This is described as a massive "Sesame Street-plus" approach by Dede. He reports:

> Programs would be designed for each age level--including adults--and delivered on multiple cable television channels (which will soon be part of almost all households). (7:3)

In this system, learning experiences would be standardized. The instruction would be supplemented by para-professional-led group discussions. Learners would then be able to react to the experiences they had seen. This type of instruction would, however, be costly for specialized learning experiences, both in the production of materials and in the training of para-professionals.

Computer-assisted instruction is another instructional technology with opportunities for growth. This technology would utilize portable computer/calculator/micro-processors.

According to Dede:

> The instructional modes which could be programmed on the inexpensive, powerful calculators now available include tutorial approaches, . . . inquiry approach, . . . and explanation/interpretation. (7:3-4)

The costs of running the above program would be low for both the equipment and programming. This method would make learning very depersonalized. There are major risks in standardization and uniformity of such programs. "One mistake in a program means that everyone nationally learns the same error, one bias in content results in all students' attitudes being malformed in the same direction." (7:4)

Another new technology might involve the use of a large central computer to deliver to cable television sets "multiple-person, interactive, artificial-intelligence-based learning simulations." (7:4)

Creativity and higher order reasoning skills may be developed using this form of instruction. The simulations are more complex and sophisticated than those currently on the market as games. These allow interaction with other learners. Input, using non-computer language, may be typed on a home keyboard. Dede describes the implications of this mode of instruction:

> Some (but not all) of higher order skill development in education could be decentralized; thus costs . . . would be reduced. People's abilities to program and use machines would be enhanced; simultaneously, society might become oriented much more toward abstract skills and abilities than interpersonal skills and

> interaction. Developmental costs will be exremely high; . . . these high production costs require a large client audience for cost-effectiveness; . . . once the learning simulation is developed, the use costs are negligible . . . (7:4)

Another instructional technology of the future may couple video-disc images and sound track to an interactive microcomputer. The filmed material presented would be tailored to fit learner responses and maximize the efficiency of instruction. This type of learning mode provides personalized learning experiences. The costs of this technology are high in the production area; but the use costs are low. This technology might replace group teaching in some situations but not in specialized areas or in those areas requiring higher order skills.

In addition to the technological changes mentioned above, there are other directions in which non-traditional education may move. These include but are not limited to some of the following:

- Cable television will continue to expand, and television will become an important part of the future of education. Gould states: "The potentialities of cable television should receive the most careful scrutiny by educators . . . because they represent an important part of the education's future." (12:102) Television may very well become the key instrument for telecommunications for educational purposes.
- We will begin to see more cooperation and collaboration among community colleges and junior colleges and public

and private four-year institutions. The governance of institutions may change as a result of this collaboration.

- College credits will assume less importance in the future. Degrees may be awarded by examination and by the evaluation of competence. Distinctions will be made between degrees and credentials. The latter will be a measure of competence and personal achievement.

- More and more businesses will become involved in education; many will offer degrees for their own programs. In the future, "the number of places in which education can be acquired will proliferate even more. Airports now provide many areas of intellectual stimulation and advancement." (22:30)

- In the future, educational requirements will be easily fulfilled off campus. "A person can literally carry an education with him or her . . ." (22:30) All that will be required is a telephone or an electric outlet.

- Changes will occur in faculty roles. Many faculty members will act as facilitators, tutors, and mentors.

- Informational technology, as predicted by the Carnegie Commission on Higher Education, will be a major part of off-campus instruction at the college level.

- The development of materials for lifelong learning will be a cooperative effort among teachers, businesses, and the manufacturers of educational materials.

- Colleges and universities will offer more in-service programs and will emphasize service to the learner, "thus

countering what has become a degree-granting obsession." (12:xviii)

The future thrusts of non-traditional education are many. Cross summarizes the future:

> If history repeats itself . . . college curricula will slowly respond to the changing learning needs of the nation. There will be no revolution; it will look more like continuing evolution. But with the exponential pace of change today, we may see a substantial reshaping of the college curriculum by the year 2000. That is, the traditional academic disciplines will not be diminished, but the social sciences, in particular, may be reshaped by the new emphasis on experiential learning. (4:21)

## Non-Traditional Modalities

The methods by which non-traditional education may be delivered are numerous. Considerable data are available on the various modes of instruction. Preferences of adults for particular modes of instruction appear to be related to their familiarity with them. "Overall, the data on methods of instruction seem to demonstrate that people are more apt to like what they know than to know what they like." (6:5)

Adults need to learn in places and at times convenient to them. These needs will have an overriding impact on the delivery systems used in the future. Cross emphasizes:

> A delivery system without technologies cannot offer instruction that adults need, where they andgive it their attention, and at times when they are free to do so. (6:97)

A number of non-traditional modes of instruction are being used in our present educational systems. As technologies

advance and as economic pressures dictate changes, others may gain wide acceptance. A variety of non-traditional modalities will be reviewed on the following pages.

Videocassettes/Videotapes: Videocassettes or videotapes offer the advantage of being an off-time, on-demand system. They may be used in carrels at the institution or in the learner's home at the convenience of the learner. The length of time spent on learning, the number of repetitions, and the choice of time for learning are distinct advantages of this method of instruction. Thus, this form of non-traditional study becomes "independent of time and place." (6:98) Gould underscores this thought:

> Videotapes and cassettes should be carefully evaluated as devices for adding new dimensions of time, space, and flexibility to the learning process. (12:104)

CATV (Community Antenna Television): This is an earlier form of cable television. This mode of instruction, like videocassettes, enables the learner to study at his or her convenience. As with videocassettes, television lacks the social interaction desired by many learners. Research indicates that many learners have a low interest in television as a mode of instruction. "Most likely, study by television is perceived . . . as a relatively solitary activity." (6:51)

There are, however, a number of advantages to cable television. Care in the preparation of televised materials for taping tends to make them more communicative. Materials prepared for television may also be used in the traditional

classroom or put on videotape. The latter makes the instruction much more cost effective. Cross states:

> . . . when the television production is run in the studio, it is right then put on video-tape; it can at the same time be run live over-the-air on educational television or on wire over closed-circuit television. (6:109)

Other advantages cited by Cross (6) include the development of a videotape library of television instructional materials which could be used at any time; the utilization of videotaped materials on public educational channels; and the duplication of videotapes for packaging as videocassettes, producing a portable program.

There are a number of other advantages of learning by television. One of these is the "evidence of a correlation between television viewing and increased reading." (18:132) Other benefits are noted by Lenz:

> The overriding plus is, of course, the outreach capability of the medium. . . . The telecourse makes it possible for people to earn credits toward a degree who would have no other chance of doing so. (18:136-137)

Lenz continues:

> The telecourse has another important advantage for general as well as for special audiences; it makes resources available--master teachers and materials from all parts of the world--that would otherwise not find their way into the classroom. (18:136-137)

Individualized Instruction: Programs which are individualized for instruction permit all students to reach a degree of competence with variations in time to achieve the required

outcomes. Traditional educational programs turn out students who have achieved at various levels during a set period of time. According to Wakin:

> In individualized programs of instruction we assert that anyone can learn a subject to mastery if given adequate time and instruction and provide for individual differences by holding attainment constant and letting time vary. (28:63)

There are a number of forms of instruction that are "individualized." Bradley states:

> Individualization in the educational process may take along one or several dimensions including time, learning outcomes, evaluation procedures, learning strategies, location, and resources. (2:3)

Some of the forms of individualized instruction are discussed below:

Programmed Instruction: Programmed instruction, a technique now used less frequently than in the past, has contributed historically to the knowledge of the learning process. Other systems rely on its concepts today. Programmed instruction is very effective in those disciplines that require sequential learning tasks presented in small units. But programmed learning sequences are limiting. According to Dunn:

> . . . programmed learning sequences that require the student's presence in the classroom or at a desk at home do not really individualize. Instead, packages should be prescribed that permit the student flexibility in determining where he will learn, when he will learn, how he will learn and with whom. (9:49)

Self-direction and motivation are limited in programmed instruction.

Audio-Tutorial (A-T) Method: The audio-tutorial method is a multi-media approach to individualized instruction. This approach provides human interaction and variety lacking in many of the other individualized programs. There are generally three components to this method: a general meeting for lecture/discussion, independent study sessions, and quiz sessions. Wakin reports:

> Because students differ in their responsiveness to various media, the multimedia approach makes provision for individual preferences for different kinds of activities and for the use of different sensory modalities such as reading, listening, and the manipulation of concrete objects. (28:66)

The audio-tutorial method lacks some flexibility in its self-pacing functions, but is excellent for laboratory courses. It provides for variety in instruction, for small-group discussions, and for helping those students who have reading problems.

Keller Plan or Personalized System of Instruction (PSI): This plan breaks a course down into self-paced learning modules. The objectives of each module are presented by the instructor in a study guide. This method is practical for students who read well, as it emphasizes the written word. Occasionally, other media may be used, although they are not necessary for this method of instruction. According to Cross (4:109), the PSI method has a number of advantages over the A-T method. First, the self-pacing functions of the personalized system of instruction are more flexible; second, student proctors

provide more personalized attention for individual students; and third, the research evidence is stronger for PSI. Wakin has another point of view. She asserts:

> PSI is not without its problems--student withdrawals, grading, boredom of students, the difficulty of defining "mastery," etc. . . . (28:66)

Independent Study: This is another method used in non-traditional settings. Independent study has long been used in graduate education. A description of independent study is provided by Dressel:

> . . . independent study . . . means motivation, curiosity, a sense of self-sufficiency and self-direction, ability to think critically and creatively, awareness of resources, and some ability to use them. (8:7)

Dressel continues:

> Independent study is the student's self-directed pursuit of academic competence in as autonomous a manner as he is able to exercise at any particular time. Basically, independent study calls for deemphasizing those practices which diminish and emphasizing those practices which increase the individual's academic autonomy at any stage of his development. (8:1)

Many of today's students are stepping in and out of education. They are taking time off for work, travel, or other off-campus experiences. Independent study can assist in meeting the needs of students for out-of-college experiences. Independent study also prepares for "tomorrow's self-initiated, life-long learning." (8:9) Dressel emphasizes that "the ability to carry on independent study alone or with peers should be a major goal of education." (8:2) Dressel further believes

that "independent study, properly used, absorbs the total person and develops the noncognitive as well as the cognitive faculties:" (8:11)

Learning Contracts: Contract learning permits a number of variations in learning. These may include the learning strategy, the procedure for evaluation, individualization of outcomes, and independence of time and place. Contract learning appears to have a positive record. Lenz states:

> The dropout rate is low, and most faculty members consider the work done by contract students somewhat higher in quality than that of undergraduates in traditional institutions. (18:159-160)

Contract learning allows learners to design programs around specific needs, interests, or prior experiences. The direction of the program is determined by the learner with help in planning from the faculty member. Flexible timing, individualized evaluation, varied modes of education, and interdisciplinary or extradisciplinary learning are characteristics of contract learning programs. Students become responsible for their own educational progress.

Experiential Learning: Today's students have many opportunities to acquire experience beyond the formal education establishment. This experience is generally obtained prior to matriculating in an institution or in an educational program. Instruments must be provided for evaluating and documenting such experiences. The need for experiential learning is described by Moon:

> . . . many adults need the programs and credentials colleges can offer. But what they need from colleges are new kinds of programs designed to fit their lives, schedules, and maturity--programs differing from those traditionally offered by colleges. And one of the most decisive ways in which effective new degree programs for adults need to differ is by providing recognition, with credit, of their pior college-level learning. (20:x)

Correspondence Courses, Radio, Television, and Newspapers: Although television is one form of "distance education," other forms of this education are being revived. "There is a new enthusiasm for off-campus . . . distance education." (14:2)

In the past, radio instruction has lacked planning and has had limited resources. As an instructional mode, the cost of radio is low. With some changes, radio may make a comeback in the future. Lenz projects:

> There have been some recent developments that may motivate continuing educators to give closer consideration to radio as a medium for reaching a broad and diverse public. The satellite interconnection for public radio means a considerable upgrading of the technical capabilities of the system. . . . (18:154)

In spite of television, the radio audience has been growing rather than declining. Car radios and transitors allow people to listen to the radio at any time and any place. Thus, the radio may become more important in the future as a mode of non-traditional instruction.

Correspondence courses, telephones, and newspapers must also be included as a mode of instruction in the open-learning

movement. These means of communication are familiar to everyone and should not be overlooked as instructional modes.

In conclusion, there is no ideal method--no panacea for all students--in all subjects. Non-traditional education has produced a variety of instructional modes. The strengths and weaknesses of each are now coming to light.

What is the preference of this writer? One cannot determine which particular mode of instruction is preferred until the learning needs of the student and the nature of the course to be taught are defined. Many of these approaches, including the contract, experiential learning, audio-tutorial instruction, personalized-system of instruction, videocassettes, and distance education are utilized at Bunker Hill Community College. The writer has had some experience with all of these modalities. One method of instruction, however, cannot fit all students, all courses, or all instructors. Needs must be ascertained BEFORE modes of instruction are selected.

## Implications of Non-Traditional Approaches for Higher Education

In the past, the primary focus of non-traditional education has been limited to junior and community colleges. These institutions were the first to open their doors to the "new clientele," the first to see that traditional approaches were not working, and the first to experiment with non-traditional approaches. Currently, non-traditional education is finding

its way into the four-year public and private institutions. In time, all institutions will be affected by non-traditional education, whether or not they wish to be. The implications of non-traditional approaches for higher education are numerous. Some of these are outlined in this section of the report.

- As institutions modernize their facilities and plan for additional structures, the new media must be considered. This will require careful administrative planning and the input of faculty and media specialists.

- Budgeting for the new technologies will become a prime concern for higher education. Finances must be examined, the advantages and disadvantages of various forms of instruction discussed, and long-range plans developed. "Careful attention must be given to budgeting for the new technology." (10:165)

- The present institutional accrediting agencies may have to undergo changes in philosophy and methods of evaluation. Traditional standards imposed by accrediting agencies may have to be changed to reflect non-traditional education. "New evaluative tools must be developed to match the non-traditional arrangements now evolving, so that accreditation and credentialing will have appropriate measures of quality." (12:xviii)

- Presently, equipment and software decisions are vested with the media specialist. In the future, all educators must be concerned with the compatibility and standardization of equipment and software.

- As the growth of television as a medium of instruction seems to be inevitable, educators will have to become involved with issues of quality control. "Systems of quality control should be built into the instructional and evaluative aspects of non-traditional study whenever possible." (12:130) The long-range possibilities of satellite broadcasting should be explored. (12:106) As instruction through television becomes more standardized, local control over content will be reduced, increasing the possibility of propaganda and error. Higher education must concern itself with this problem. (7:5)

- Higher education may begin to effect changes in the present credit and degree system. Education must deal with the issues of awarding credit for distance education, cooperative work programs, experiential learning, and similar programs. "In the future, qualifications for advanced education as well as for employment may rest more heavily on indicators of specific competencies and accomplishment than on degrees. Such a development will require a substantial reformation of the present credit system." (6:126) Higher education may begin to consider the awarding of degrees based on learner goals, rather than on specific courses and time spent at the institution. "Colleges and universities should put more emphasis on the avenues they open to learning for its own sake and less on the earning of degrees; . . ." (12:63)

• Changing professional roles, resulting from the efforts to individualize instruction, will become issues for higher education. Faculty must be familiarized with contract learning and other forms of individualized instruction. "Faculty chosen for new programs should be creative, willing to learn new techniques required, and sufficiently flexible to make changes; . . ." (12:63) Higher education may find itself redefining faculty teaching loads, tenure, and promotion. "Emerging roles must be examined and articulated within insitutional contexts . . . The conept of faculty development assumes new meaning. . . . Individualized options for faculty as well as students may be an important consideration in individualized higher education." (2:14) Faculty facilitator styles and student learning styles may require matching for compatibility as the trend toward individualized instruction continues. In addition, the roles of faculty members may become expanded as they become faculty trainers and developers, working to educate community faculty involved in contract learning and other individualized experiences. "Administrators in individualized education should find it useful to learn the most common style of each mentor in the program. This may help in allocating workloads, understanding problems of individual faculty members, and making assignments of particular students." (2:11)

• Higher education must become involved with long-range planning for the educational technologies to ensure that

technology is limited to those areas which provide sound, cost-effective education.

- Educational administrators must prepare to cope with problems resulting from personnel shifts caused by the new technologies. These personnel shifts may create tensions for a short period as teaching roles change from the "traditional classroom" to the community, industry, and media centers. "The final impact of technology on educational employment will not be so much to reduce as to alter roles and to shift employment to educational agents other than schools." (7:5) This shift in employment will require restructuring of in-service and pre-service training of teachers and major changes in departments of education in four-year public and private teacher training institutions. "A new model of teaching and learning will be needed, with corresponding changes in roles and relationships for teachers, parents, industries, media, administrators, and government." (7:6) Alliances with media associations and computer associations must be formed concurrently with the training of teachers and administrators.

- Higher education must be concerned with the development of life-long learning materials service centers. These centers will require learning specialists, information (librarian) specialists, and media and graphic arts specialists. A systems approach to course development will be employed in these life-long learning centers, where objectives will be defined, programs created, and results evaluated. " A life-long learning materials service center would help . . . to

create new educational patterns fitting the times, to find imaginative ways to use all available instructional resources to build these patterns into programs, . . . and to hold the needs of the students as paramount over the convenience of institutions." (6:107)

- Changes and adaptations in structure and governance will become inevitable as a result of non-traditional education. (12:40) "Appropriate alterations in patterns of governance should be considered when non-traditional arrangements become significant either within . . . or among institutions." (12:54) Some of the changes in organization and structure will include altered patterns of residence, changes in the system of academic accounting, off campus laboratories sponsored jointly by several institutions, joint faculty appointments among institutions, and other collaborative efforts. The sharing of the talents of faculty members among institutions will lead inevitably to the coordination of administrative processes as well.

- Institutions of higher learning must form committees to articulate non-traditional programs among earlier education, higher education, and adult education. (10:47)

- Institutions of higher learning must re-examine the current admissions procedures. "Admission of students to non-traditional programs should be based on new kinds of examining procedures or more flexible and interpretive application of criteria." (12:68)

- The concept of interrupted study will gain in popularity and will become accepted by institutions and employers as a worthwhile educational experience. This may affect the institutional functions of advising, accounting, and registration.

- Higher education must enlist the support of boards of trustees, regents, senates, and controlling committees as efforts to introduce non-traditional education into existing institutions increase. (12:56)

- "New agencies must be created to make possible easy access to information and develop better ways to disseminate it, to perform guidance and counseling services, and to be assessors and repositories of credit for student achievement." (12:xviii)

- Higher education must provide direction for the relating of non-traditional education to the entire process of curriculum development. "A community college staff must be well organized to administer the new media-educational technology effectively. Instructors . . . and administrators need to have a clear conception of their function . . . including curriculum development." (10:164)

- Institutions of higher learning will have to work with the government to develop regulations which will enable education to "interface with public utilities such as the Bell System; Federal and state regulation problems will become very complex." (7:6)

- Higher education may look for the emergence of new definitions of intelligence. "Historically, our definition of intelligence has changed based on our technological capabilities." (7:6)

- One of the results of non-traditional education is that "training . . . will be done by machine, while educating . . . will be facilitated by people." (7:6)

Non-traditional education is having an impact on higher education and will continue to do so for a long time. Our society will begin to have a better understanding of the strengths and weaknesses of technology as people interact with technology in day-to-day educational settings. Lenz has this to say about the impact of non-traditional education on higher education:

> In education, long-term effects will include centralization of curriculum development and finances, but decentralization of the learning environment into homes and communities. (7:6)

ARE INSTITUTIONS READY TO MAKE THE NECESSARY CHANGES? The immediate future alone will answer this question.

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